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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Mark W. Lambert et al.      Art Unit : 2123  
Serial No. : 10/085,528      Examiner : Ayal I. Sharon  
Filed : February 25, 2002      Conf. No. : 9800  
Title : METHOD AND APPARATUS FOR SIMPLIFIED PATTERNING OF  
FEATURES IN A COMPUTER AIDED DESIGN (CAD) MODEL

**Mail Stop Appeal Brief - Patents**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

BRIEF ON APPEAL

**(1) Real Party in Interest**

The real party in interest is Autodesk, Inc.

**(2) Related Appeals and Interferences**

None.

**(3) Status of Claims**

Claims 1-9, 11-13, and 15-39 are pending. Of these, claims 1, 12, and 23 are in independent form.

**(4) Status of Amendments**

All amendments have been entered.

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**(5) Summary of Claimed Subject Matter**

Claim 1 is directed to a method for modifying the pattern or features of a CAD geometry piece. As part of the method, an input for a pattern is received. (Spec., page 21, lines 3-7.) The pattern includes a plurality of features included within the boundaries of a CAD geometry piece, where a feature corresponds to a feature of the CAD geometry piece. (Spec., page 21, lines 3-7.) An indication of modification to the CAD geometry piece is received. (Spec., page 21, lines 8-9.) The CAD geometry piece and its boundary is automatically modified based at least on the received indication. (Spec., page 21, lines 9-12.) At least one of the pattern or the features are automatically modified to be continuously included within the modified boundary, based at least upon the modified CAD geometry piece and the received input. (Spec., page 21, lines 13-21.)

Claim 12 is directed to an apparatus. The apparatus includes a storage medium having stored thereon a plurality of programming instructions and a processor coupled to the storage medium to execute the programming instructions. (Figure 10; Spec., page 22, lines 1-19). The programming instructions, when executed, cause the apparatus to: receive an input corresponding to generation of a pattern in a CAD geometry piece, the pattern including a plurality of features included within a boundary of the CAD geometry piece (Spec., page 21, lines 3-7); receive an indication of modification to the CAD geometry piece (Spec., page 21, lines 8-9); automatically modify the CAD geometry piece and its boundary based at least upon the received indication (Spec., page 21, lines 9-12); and automatically modify at least one of the pattern or the features to be continuously included within the boundary of the modified CAD geometry piece, based at least upon the modified CAD geometry piece and the received input (Spec., page 21, lines 13-21).

Claim 23 is directed to an article of manufacture having stored thereon a plurality of programming instructions. (Spec., page 22, lines 11-18.) The programming instructions, when executed, cause a machine to: receive an input corresponding to generation of a pattern in a CAD geometry piece, the pattern including a plurality of features included within a boundary of the CAD geometry piece (Spec., page 21, lines 3-7); receive an indication of modification to the CAD geometry piece (Spec., page 21, lines 8-9); automatically modify the CAD geometry piece and its boundary based at least upon the received indication (Spec., page 21, lines 9-12); and automatically modify at least one of the pattern or the features to be continuously included

within the boundary of the modified CAD geometry piece, based at least upon the modified CAD geometry piece and the received input (Spec., page 21, lines 13-21).

Claim 8, dependent from claim 1, adds that automatically modifying the pattern or the features includes automatically determining what modification, if any, is needed to one or more dimensions of at least one of the features. (Spec., page 17, lines 15-21)

Claim 34, dependent from claim 1, adds that automatically modifying the pattern or the features includes removing one or more features from the pattern. (Spec., page 15, line 14 – page 16, line 2.)

Claim 35, dependent from claim 1, adds that automatically modifying the pattern or the features includes adjusting a distance between a feature and the boundary such that the features are continuously included within the boundary. (Spec., page 16, lines 7-21.)

#### **(6) Grounds of Rejection**

Claims 1-9, 11-13, and 15-39 were rejected under 35 U.S.C. § 102(a)-(b) as unpatentable over the web page [http://web.archive.org/web/20010203144400/www.d-cubed.co.uk/prod\\_dcm\\_intro.htm](http://web.archive.org/web/20010203144400/www.d-cubed.co.uk/prod_dcm_intro.htm) (hereinafter “D-Cubed web page”).

#### **(7) Argument**

The Examiner relies wholly on two paragraphs (“two paragraphs”) from the D-Cubed web page for all the rejections. The two paragraphs read, emphasis added:

In brief, variational techniques enable the end-user to specify and control their geometric models through the use of simple rules. Such rules frequently include dimensions and constraints. Dimensions, such as distances, angles and radii, have an easily understood interpretation. The meaning of constraints is less obvious. In fact they are simply rules that restrict, i.e. constrain, the behaviour of the geometries in the model. Examples of constraints include parallelism, tangency and concentricity.

To modify a model, the end-user simply specifies a change to the rules, such as a modified value for a dimension. The DCM then automatically re-calculates the locations of all the geometries affected by the new dimension value, whilst ensuring that their final locations are consistent with the previously applied dimensions and constraints. The end-user does not have to re-position the geometries manually to create the new configuration, hence their productivity is greatly enhanced.

Rejection under 35 U.S.C. 102(b) over the D-Cubed web page

Claims 1-9, 11-13, and 15-39. Claims 1-9, 11-13, and 15-39 were rejected based upon an alleged public use or sale of the claimed invention. The Examiner asserts that the Dimensional Constraint Manager (DCM) as described in the D-Cubed web page reads upon the claims and implies that the Dimensional Constraint Manager was publicly on sale more than 1 year before the filing date of the instant application. As discussed below, the Dimensional Constraint Manager as described in the D-Cubed web page does not read upon the claims and therefore does not qualify as a public use or sale of the claimed invention. Therefore, this ground of rejection should be reversed.

Rejection under 35 U.S.C. 102(a) over the D-Cubed web page

Claim 1. Claim 1 recites in part, "receiving an indication of modification to the CAD geometry piece."

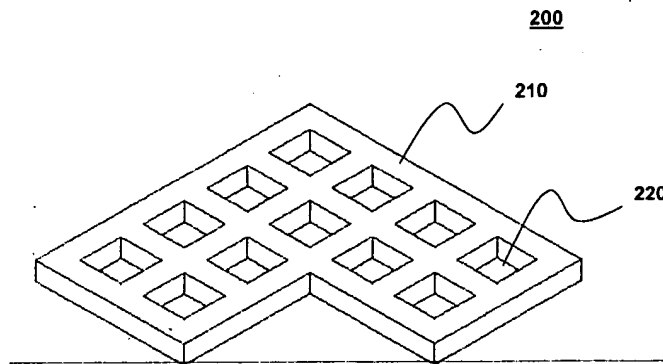
The Applicant submits that the two paragraphs do not disclose "receiving an indication of modification to the CAD geometry piece." The Examiner has not explained what in the two paragraphs allegedly corresponds to this feature. *Cf.* MPEP § 707 ("When a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable. The pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified."). The only input described in the two paragraphs provides: "To modify a model, the end-user simply specifies a change to the rules." Then, in response to the user input, the DCM "automatically re-calculates the locations of all the geometries."

The input which appears to be suggested by the two paragraphs is not what is recited in Claim 1. The input which appears to be suggested by the two paragraphs is "a change to the rules," in response to which the geometries are automatically recalculated. By contrast, Claim 1 recites "receiving an indication of modification to the CAD geometry piece." Thus, the only input described in the two paragraphs changes a rule associated with a model, rather than directly modifying a piece. Accordingly, Applicant respectfully submits that the two paragraphs do not anticipate Claim 1. Therefore, the examiner has not made out a *prima facie* case of anticipation.

Claim 1 also recites, in part, "receiving an input for a pattern, the pattern comprising a plurality of features included within a boundary of a CAD geometry piece where a feature corresponds to a feature of the CAD geometry piece."

Figures 2 and 3 illustrate an exemplary "pattern of features." (Spec., pages 9-10.) The illustrated pattern 210 is rectangular and each illustrated feature 220 is a square. (Spec., page 11.) Figure 2 is depicted below. A "pattern," as used in Claim 1, comprises a plurality of features. The Encarta World English Dictionary, 1st ed. (1999), defines a pattern, in part, as "a regular or repetitive form, order, or arrangement." See Exhibit A. The Oxford English Dictionary, 2nd ed. (1989), defines a pattern, in part, as "a regular or decorative arrangement," or a "repeated" design. Indeed, the illustrated pattern 210 is a rectangular, regular or repetitive arrangement of a plurality of square features 220. Another "regular" or "repetitive" pattern is shown in Figure 8.

**FIG. 2**



The Applicant submits that the two paragraphs do not teach a pattern. The two paragraphs merely discuss "geometric models" with "geometries." Accordingly, the two paragraphs do not anticipate Claim 1. For these reasons, the rejection of claim 1 should be reversed.

Claims 2-9, 11, and 34-35. Claims 2-9, 11, and 34-35 are dependent from claim 1 and incorporate the limitations of claim 1. Therefore, the rejection of these claims should be reversed for at least the reasons set forth above.

Claim 12. Claim 12 recites an apparatus that includes a storage medium having stored thereon a plurality of instructions, which when executed, causes the apparatus to, in part, “receive an input corresponding to generation of a pattern in a computer aided design (CAD) geometry piece, the pattern comprising a plurality of features ... .” and “receive an indication of modification to the CAD geometry piece.” As discussed above, the two paragraphs in the D-cubed web page do not teach or suggest a pattern. Furthermore, the “receive an indication ... .” language of claim 12 is identical to the element “receiving an indication of modification to the CAD geometry piece” recited in claim 1, and as discussed above, the two paragraphs in the D-cubed web page do not teach or suggest “receiving an indication of modification to the CAD geometry piece.” Therefore, the two paragraphs do not anticipate claim 12, and the rejection of claim 12 should be reversed.

Claims 13, 15-22, 36-37. Claims 13, 15-22, 36-37 are dependent from claim 12 and incorporate the limitations of claim 12. Therefore, the rejection of these claims should be reversed for at least the reasons set forth above.

Claim 23. Claim 23 recites an article of manufacture having stored therein a plurality of programming instructions, which when executed, cause a machine to, in part, “receive an input for a pattern, the pattern comprising a plurality of features ... .” and “receive an indication of modification to the CAD geometry piece.” These limitations are identical to elements recited in claim 1. Thus, the rejection of claim 23 should be reversed for at least the same reasons set forth above with respect to claim 1.

Claims 24-33, 38-39. Claims 24-33, 38-39 are dependent from claim 23 and incorporate the limitations of claim 23. Therefore, the rejection of these claims should be reversed for at least the reasons set forth above.

Claims 8, 11, 19, 21, 22, 30, 32, and 33. For at least the reasons set forth above, the rejection of claims 8, 11, 19, 21, 22, 30, 32, and 33 should be reversed. Furthermore, claim 8

recites in part, “automatically determining what modification, if any, is necessary to one or more dimensions of at least one of the plurality of features.” The Examiner again cited generally to the two paragraphs in the D-cubed web page. However, the Applicant submits that the two paragraphs do not disclose modifying one or more dimensions of features or automatically determining what modifications are necessary to one or more dimensions. Rather, the two paragraphs merely disclose automatically recalculating locations. Therefore, the rejection of claim 8, as well as the rejection of claims 11, 19, 21, 22, 30, 32, and 33, which also include the limitations of automatically determining what modification is necessary to one or more dimensions and/or modifying one or more dimensions, should be reversed.

Claims 34, 36, 38. For at least the reasons set forth above, the rejection of claims 34, 36, and 38 should be reversed. Furthermore, claim 34 recites in part, “automatically modifying at least one of the pattern or the plurality of features includes removing one or more features from the pattern.” The Examiner again cited generally to the two paragraphs in the D-cubed web page. While the two paragraphs disclose recalculating locations of geometries, nowhere in the two paragraphs is disclosed “automatically ... removing one or more features from the pattern.” Therefore, the rejection of claim 34, as well as the rejection of claims 36 and 38, which also include the limitation of removing one or more features from the pattern, should be reversed.

Claims 35, 37, 39. For at least the reasons set forth above, the rejection of claims 35, 37, and 39 should be reversed. Furthermore, claim 35 recites in part, “adjusting a distance between at least one feature and the boundary such that the plurality of features are continuously included within the boundary.” The Examiner again cited generally to the two paragraphs in the D-cubed web page. However, while the two paragraphs disclose six kinds of “rules” (“distances, angles, ... radii, parallelism, tangency, and concentricity”), the two paragraphs do not disclose that continuous inclusion within a boundary is a kind of rule. Therefore, the rejection of claim 35, as well as the rejection of claims 37 and 39, which also include the limitation of continuous inclusion within a boundary, should be reversed.

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**(8) Conclusion**

For the reasons stated above, reversal of the claim rejections is respectfully requested.

In accordance with appellant's Notice of Appeal filed July 20, 2006, appellant submits this Appeal Brief along with a check in the amount of \$500 for the Appeal Brief filing fee.

Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: 9/20/2006

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### **Appendix of Claims**

1. A method comprising:

receiving an input for a pattern , the pattern comprising a plurality of features included within a boundary of a CAD geometry piece where a feature corresponds to a feature of the CAD geometry piece;

receiving an indication of modification to the CAD geometry piece;

automatically modifying the CAD geometry piece and its boundary based at least upon the received indication; and

automatically modifying at least one of the pattern or the plurality of features to be continuously included within the boundary of the modified CAD geometry piece, based at least upon the modified CAD geometry piece and the received input.

2. The method of claim 1, wherein said receiving the input comprises receiving an input corresponding to an indication of a direction, the indication having an X- component and a Y-component.

3. The method of claim 1, wherein:

said receiving the input includes receiving a boundary value, the boundary value having at least one of a maximum value and a minimum value defining a maximum and a minimum, respectively, for a distance between at least one feature and the boundary; and

automatically modifying at least one of the pattern or the plurality of features includes maintaining a distance between the at least one feature and the boundary within the boundary value.

4. The method of claim 1, wherein said receiving the indication of modification comprises receiving an indication of modification to a 2-D geometry piece parametrically defining the CAD geometry piece.

5. The method of claim 4, wherein said receiving the modification to the geometry comprises receiving an indication of modification of a dimension of the 2-D geometry piece parametrically defining said CAD geometry piece.

6. The method of claim 1, wherein said receiving the input comprises receiving an indication to optimize the pattern.

7. The method of claim 1, wherein said automatically modifying the CAD geometry piece comprises parametrically updating the CAD geometry piece.

8. The method of claim 1, wherein said automatically modifying at least one of the pattern or the plurality of features comprises automatically determining what modification, if any, is necessary to one or more dimension of at least one of the plurality of features.

9. The method of claim 1, wherein said automatically modifying at least one of the pattern or the plurality of features comprises automatically determining what modification, if any, is necessary to an inter-feature distance between each of the plurality of features, and

changing the inter-feature distance between at least one feature and an adjacent feature upon determining the modification is necessary.

11. The method of claim 1, wherein said automatically modifying at least one of the pattern or the plurality of features comprises:

automatically determining what modification, if any, is necessary to a first dimension in view of a determined modification to a second dimension, to maintain a relationship between said first and second dimensions, where the first dimension and the second dimension comprise first and second dimensions of each feature of the plurality of features, and

modifying at least one of the first dimension or the second dimension of each feature of the plurality of features.

12. An apparatus comprising:

a storage medium having stored therein a plurality of programming instructions, which when executed, the instructions cause the apparatus to:

receive an input corresponding to generation of a pattern in a computer aided design (CAD) geometry piece, the pattern comprising a plurality of features included within a boundary of the CAD geometry piece where a feature corresponds to a feature of the CAD geometry piece;

receive an indication of modification to the CAD geometry piece;

automatically modify the CAD geometry piece and its boundary based at least upon the received indication; and

automatically modify at least one of the pattern or the plurality of features to be continuously included within the boundary of the modified CAD geometry piece, based at least upon the modified CAD geometry piece and the received input; and  
a processor coupled to the storage medium to execute the programming instructions.

13. The apparatus of claim 12, wherein said programming instructions, which when executed, cause the apparatus to receive an input corresponding to an indication of a direction, the indication having an X-component and a Y-component.

15. The apparatus of claim 12, wherein said programming instructions, which when executed, cause the apparatus to:

receive the input include programming instructions, which when executed, cause the apparatus to receive a boundary value, the boundary value having at least one of a maximum value and a minimum value defining a maximum and a minimum, respectively, for a distance between at least one feature and the boundary, and

automatically modify at least one of the pattern or the plurality of features include programming instructions, which when executed, cause the apparatus to maintain a distance between the at least one feature and the boundary within the boundary value.

16. The apparatus of claim 15, wherein said programming instructions, which when executed, cause the apparatus to receive an indication of modification of a dimension of the 2-D geometry piece parametrically defining said CAD geometry piece.

17. The apparatus of claim 12, wherein said programming instructions, which when executed, cause the apparatus to receive an indication to optimize the pattern.

18. The apparatus of claim 12, wherein said programming instructions, which when executed, cause the apparatus to parametrically update the CAD geometry piece.

19. The apparatus of claim 12, wherein said programming instructions, which when executed, cause the apparatus to automatically determining what modification, if any, is necessary for various dimensional sizes of each of the plurality of features.

20. The apparatus of claim 12, wherein said programming instructions, which when executed, cause the apparatus to automatically determine what modification, if any, is necessary to an inter-feature distance between each of the plurality of features, and changing the inter-feature distance between at least one feature and an adjacent feature upon determining the modification is necessary.

21. The apparatus of claim 12, wherein said programming instructions, which when executed, cause the apparatus to automatically determine what modification, if any, is necessary to a dimension to conform to a user specified input.

22. The apparatus of claim 12, wherein said programming instructions, which when executed, cause the apparatus to automatically determine what modification, if any, is necessary to a first dimension in view of a determined modification to a second dimension, to maintain a relationship between said first and second dimensions, where the first dimension and the second dimension comprise first and second dimensions of each feature of the plurality of features, and modifying at least one of the first dimension or the second dimension of each feature of the plurality of features.

23. An article of manufacture having stored therein plurality of programming instructions, which when executed, the instructions cause a machine to:

- receive an input for a pattern, the pattern comprising a plurality of features included within a boundary of a CAD geometry piece where a feature corresponds to a feature of the CAD geometry piece;
- receive an indication of modification to the CAD geometry piece;
- automatically modify the CAD geometry piece and its boundary based at least upon the received indication; and
- automatically modify at least one of the pattern or the plurality of features to be continuously included within the boundary of the modified CAD geometry piece, based at least upon the modified CAD geometry piece and the received input.

24. The article of manufacture of claim 23, wherein said programming instructions, which when executed, cause the machine to receive an input corresponding to an indication of a direction, the indication having an X-component and a Y-component.

25. The article of manufacture of claim 23, wherein said programming instructions, which when executed, cause the machine to:

receive the input include programming instructions, which when executed, cause the machine to receive a boundary value, the boundary value having at least one of a maximum value and a minimum value defining a maximum and a minimum, respectively, for a distance between at least one feature and the boundary, and

automatically modify at least one of the pattern or the plurality of features include programming instructions, which when executed, cause the machine to maintain a distance between the at least one feature and the boundary within the boundary value.

26. The article of manufacture of claim 23, wherein said programming instructions, which when executed, cause the machine to receive an indication of modification to a 2-D geometry piece parametrically defining the CAD geometry piece.

27. The article of manufacture of claim 23, wherein said programming instructions, which when executed, cause the machine to receive an indication of modification of a dimension of the 2-D geometry piece parametrically defining said CAD geometry piece.

28. The article of manufacture of claim 23, wherein said programming instructions, which when executed, cause the machine to receive an indication to optimize the pattern.

29. The article of manufacture of claim 23, wherein said programming instructions, which when executed, cause the machine to parametrically update the CAD geometry piece.

30. The article of manufacture of claim 23, wherein said programming instructions, which when executed, cause the machine to automatically determining what modification, if any, is necessary for various dimensional sizes of each of the plurality of features.

31. The article of manufacture of claim 23, wherein said programming instructions, which when executed, cause the machine to automatically determine what modification, if any, is necessary to an inter-feature distance between each of the plurality of features, and changing the inter-feature distance between at least one feature and an adjacent feature upon determining the modification is necessary.

32. The article of manufacture of claim 23, wherein said programming instructions, which when executed, cause the machine to automatically determine what modification, if any, is necessary to a dimension to conform to a user specified input.

33. The article of manufacture of claim 23, wherein said programming instructions, which when executed, cause the machine to:

automatically determine what modification, if any, is necessary to a first dimension in view of a determined modification to a second dimension, to maintain a relationship between said first and second dimensions, where the first dimension and the second dimension comprise first and second dimensions of each feature of the plurality of features, and

modify at least one of the first dimension or the second dimension of each feature of the plurality of features.

34. The method of claim 1, wherein said automatically modifying at least one of the pattern or the plurality of features includes removing one or more features from the pattern.

35. The method of claim 1, wherein said automatically modifying at least one of the pattern or the plurality of features includes adjusting a distance between at least one feature and the boundary such that the plurality of features are continuously included within the boundary.

36. The method of claim 12, wherein said programming instructions, which when executed, cause the apparatus to automatically modify at least one of the pattern or the plurality of features include programming instructions, which when executed, cause the apparatus to remove one or more features from the pattern.

37. The method of claim 12, wherein said programming instructions, which when executed, cause the apparatus to automatically modify at least one of the pattern or the plurality of features include programming instructions, which when executed, cause the apparatus to

adjust a distance between at least one feature and the boundary such that the plurality of features are continuously included within the boundary.

38. The article of manufacture of claim 23, wherein said programming instructions, which when executed, cause the machine to automatically modify at least one of the pattern or the plurality of features include programming instructions, which when executed, cause the machine to remove one or more features from the pattern.

39. The article of manufacture of claim 23, wherein said programming instructions, which when executed, cause the machine to automatically modify at least one of the pattern or the plurality of features include programming instructions, which when executed, cause the machine to adjust a distance between at least one feature and the boundary such that the plurality of features are continuously included within the boundary.

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### **Related Proceedings Appendix**

None

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### **Evidence Appendix**

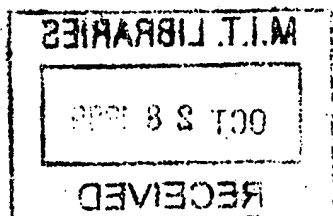
Exhibit A: Dictionary entry "pattern" in the Encarta World English Dictionary, 1st ed. (1999).

# ENCARTA<sup>®</sup> WORLD ENGLISH DICTIONARY

St. Martin's Press



New York



REF.  
PE1628  
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1999

A BLOOMSBURY REFERENCE BOOK  
Created from the Bloomsbury Database of World English

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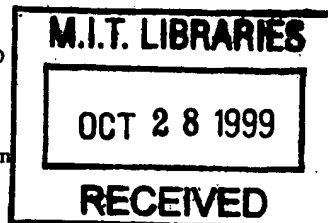
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father, paternal ◦ *patrilineal* [From Latin *pater*, and Greek *patr-*, the stem of *pater*]

tribe **ARK** (*plural -archs*) *n.* 1. **HEAD OF A** who is the head of a family or group 2. **AN** a respected and experienced senior group or family 3. **BIBLE BIBLICAL ANCESTOR** mentioned in the Bible considered as the whole human race, e.g., Adam or **HEBREW LEADER** any of the ancestors and **HEADS** of the Hebrew people in Hebrew especially in the book of Genesis, e.g., Isaac, or Jacob 5. **OLDEST MEMBER** the oldest of something, such as a community 6. **HEAD** a herd of livestock 8. **FOUNDER** a man **HEAD** of something 7. **CHR EASTERN ORTHODOX** Eastern Orthodox Church, a bishop of Constantinople, Alexandria, Antioch, and also of Russia, Romania, or Serbia 9. **ROMAN CATHOLIC BISHOP** in the Roman Catholic Church in rank to the pope 9. **THE LATTER-DAY SAINTS** a high dignitary of the Latter-day Saints with the power to invoke especially one of the Melchizedek order of Melchizedek 10. **Directly and via French from ecclesiastical Greek patriarkhēs, literally "head of a family,"** *patēr* [*patēr*]

**pa'tree aark'V, pa-tri-ar-chic adj.** 1. **MARCH** relating to or held to be typical of a particular month. 2. **TYPICAL OF A CULTURE RULED BY MEN** relating to or characteristic of a culture in which men are the most important members. 3. **CHR RULED BY A BISHOP** in Roman Catholicism, a diocese governed by a bishop — **pa-tri-ar-chal-ly**

**CROSS** *n.* a Christian cross with a shorter horizontal bar above the main

**sm** /pàytree aàrk'l izzəm/ *n.* in-  
domination by men, with women  
and as socially or constitutionally in-

/pàyt'ree aàrkət, -aàr kàyt/ *n.* 1. CHR  
IAN PATRIARCH the office, term of office,  
ction, or residence of a patriarch of  
urch 2. = **patriarchy** [Early 17thC. Via  
triarchatus, from, ultimately, ecclesiastical  
(see PATRIARCH).]

**tytree aárke/ (plural -chies) n. 1. SOCIAL**  
**DOMINATE** a social system in which  
 led as the authority within the family  
 and in which power and possessions  
 from father to son 2. **PATRIARCHAL SOCIETY**  
 tytree based on a system of patri-  
 archy. C. Via medieval Latin *patriarchia* from,  
*patriarkhēs* (see **PATRIARCH**).]

ish' /n. 1. **ARISTOCRATIC ROMAN** a member of the aristocratic family of ancient Rome, whose privilege included the exclusive right to hold high office. 2. **ARISTOCRAT** a member of the aristocracy. 3. **SOMEbody TYPICAL OF THE UPPER CLASS** a person who has the qualities and manners characteristic of the upper class. 4. **NONHEREDITARY HONORARY** title bestowed on people who had rendered service to the empire. **adj.** 1. OF OR BELONGING TO PATRICIANS, OR BELONGING TO THE ARISTOCRACY. 2. **ARISTOCRATIC** typical of aristocrats. 3. **ARISTOCRATIC** typical of aristocrats. 4. **POL. OPPOSED TO DEMOCRACY** a person or a group of people in all social classes who have the right to hold high office. **orig.** **rights** [15thC. Via French *patricien* from *patris* of a noble father, "from pater" father.]

rank of a patrician 2. PATRICIANS AS A social class to which patricians belong 3. From Latin *patricius*, from *patricius*

**patricíd** / *n.* 1. MURDER OF OWN FATHER the  
 ther by his own child or children 2.  
 OTHER somebody who murders his or  
 Late 16thC. From Late Latin *patricidium*,  
 father."] —**pat-ri-cíd-al** / *pàtrri s'íd'* / *adj.*

**St.** (389?–461?) British-born Irish  
 e spread Christianity throughout  
 organized the church there. He is  
 of Ireland. Known as the Apostle of

**pa-tri-line-age** /pàtrə línnee ij/ *n.* 1. DESCENT ON THE FATHER'S SIDE descent traced through the male line 2. ANCESTRAL GROUP ON THE FATHER'S SIDE a group of people who are related to each other on the father's side of a family

**pat-ri-lin-e-al** /pətrē līnēē əl/, **pat-ri-lin-e-er** /-ər/ *adj.*  
used to describe family relationships traced  
through the male line, or societies in which only  
such relationships are recognized —**pat-ri-lin-e-al-ty**  
*adv.*

**pat-ri-lo-cal** /pàttrə lók'V/ *adj.* used to describe a custom in which the wife goes to live with the husband's family or people after marriage, or a society in which this custom prevails — **pat-ri-lo-cal-ly** *adv.*

**pat-ri-mo-ny** /pátrə mōnē/ (*plural -nies*) *n.* 1. **INHERITANCE** FROM A FATHER an inheritance from a father or man ancestor 2. **HERITAGE** the things that one generation has inherited from its ancestors 3. **CHR ESTATE BELONGING TO A CHURCH** an estate or endowment that belongs to a church [14thC. Via French from Latin *patrimonium*, from *pater* "father." — **pat-ri-mo-ni-al** /pátrə mōnē ə/ *adj.* — **pat-ri-mo-ni-al-ly** /-lēə/ *adv.*

**pa-tri-ot** /páytree at, -ót/ *n.* somebody who proudly supports or defends his or her country and its way of life [Late 16thC. Via French from late Latin *patriota* "fellow countryman," from, ultimately, Greek *patris* "fatherland."] — **pa-tri-ot-ic** /páytree óttik/ *adj.* — **pa-tri-ot-i-cal-ty** /páytree óttíkalee/ *adv.*

**pa-tri-ot-ism** /páytree ə tizzəm/ *n.* pride in or devotion to the country somebody was born in or is a citizen of

**pa-tris-tic** /pə trɪstɪk/, **pa-tris-ti-cal** /pə trɪstɪkəl/ *adj.* CHR relating to the early Christian writers such as St. Augustine or St. Ambrose whose works have helped to shape the Christian church. [Mid-19thC. From German *Patristik*, from Latin *pater* "father."] — **pa-tris-ti-cal-ly** *adv.*

**pa-tris-tics** /pə trɪstɪks/ *n.* the study of the writings and lives of the early Christian theologians (*takes a singular verb*) [Mid-19thC: Via German *Patristik* from Latin *pater*.]

**patro-** *prefix.* = patri-

**pat-ro-eli-nous** /pàtrə klínəss/, *pat-ri-eli-nous* *adj.* descended or inherited from the men's line [Early 20thC. Coined from PATRI- + Greek *klinein* "to lean."] **pat-ri-eli-nous** /pàtrə klínəss/

**Pa-tro-clus** /pə trókləs, pə trókləs/ *n.* in Greek mythology, a friend of Achilles and a warrior in the Trojan War. When Hector killed Patroclus, Achilles avenged his death by killing Hector.

**pa-trol** /pə tróʊ/ *n.* 1. REGULAR TOUR MADE BY A GUARD a regular tour made of a place in order to guard it or to maintain order 2. SOMEBODY CARRYING OUT A PATROL a person or group that carries out a patrol 3. MIL. MILITARY UNIT ON A MISSION a military unit sent on a particular mission, e.g., to carry out an attack or reconnaissance 4. SCOUTING SUBDIVISION OF A SCOUT TROOP a subdivision of a troop of Boy Scouts of America or Girl Scouts of America ■ *v.t.* (-tróled, -tróling, -tróls) GO ON PATROL to guard or protect a place o *the troops patrolling the border* [Mid-17thC. Directly or via German *Patrolle* from French *patrouiller*, originally “to walk through mud in a military camp,” from, ultimately, Old French *patte* “paw” (source of English *patois*).]

**control car n. = 'squad car**

**a-trol·man** /pə tról·mən/ (*plural* pa-trol·men) *n.* a police officer who patrols a beat.

**pa-trol-o-gy** /pə trólləjee/ *n.* CHR the study of the writings of the Fathers of the Christian church [Early 17thC. From Greek *pater* "father."] — **pa-trol-og-i-cal** /pətrə lójjik'l/ *adj.* — **pa-trol-o-gist** /pə trólləjist/ *n.*

**a-trol tor-pe-do boat** *n.* full form of PT boat

**a-trol wag-on** *n.* U.S., ANZ. an enclosed police vehicle for transporting prisoners

**a-trol-wom-an** /pə tról woómmən/ (plural  
**pa-trol-wom-en** /-wimmin/) *n.* a policewoman who  
patrols a beat

**patron** /páytrən/ *n.* 1. **SPONSOR** somebody who gives money or other support to somebody or something, especially in the arts 2. **REGULAR CUSTOMER** a customer, especially a regular one, of a shop or business 3. **RELIG** = **patron saint** 4. **HIST** **ROMAN SLAVE MASTER** a slave master in ancient Rome who freed a slave but retained some rights over him or her [14thC. Via

French from Latin *patronus*, literally "one who protects, as a father does," from *pater* "father." —**pa-tron-al** *adj.* —**pa-tron-ly** *adj.*

- **WORD KEY: SYNONYMS**

See Synonyms at *backer*.

**pa-tron-age** /pay'tranij, pát'tranij/ *n.* 1. **APPOINTMENTS ASSIGNED BY A POLITICIAN** the appointments or privileges that a politician can give to loyal supporters 2. **POWER TO MAKE APPOINTMENTS** the political power to grant privileges or appoint people to positions 3. **REGULAR PURCHASING FROM A STORE** the regular purchasing of goods from a particular store or business 4. **SUPPORT OF A PATRON** the encouragement, monetary support, or influence of a patron 5. **CONDESCENDING KINDNESS** support or kindness offered in a condescending way [14thc. From French, from *patron* (see **PATRON**).]

**pa-tron-ize** /páytrə nīz, páttre nīz/ (-ized, -iz-ing, -iz-es)  
 v. 1. **vt.** BE CONDESCENDING to to treat somebody as if he or she were less intelligent or knowledgeable than yourself 2. **vt.** BE A REGULAR CUSTOMER OF to be a regular customer of a particular store or business (*formal*) 3. **vt.** SUPPORT SOMEBODY to give money or other material support to somebody or something, especially in the arts — **pa-tron-iz-er** *n.*

**pa·tron·iz·ing** /páytrə nīzing, pátttrə nīzing/ *adj.* treating somebody as if he or she is less intelligent or knowledgeable than yourself —**pa·tron·iz·ing·ly** *adv.*

**pa-tron saint** *n.* a saint who is believed to be the special guardian of somebody or something, especially a country, trade, or group of people

**pat-ro-nym-ic** /pətrə nɪmɪk/ *adj.* DERIVED FROM A MAN  
ANCESTORS NAME used to describe a name derived from  
a man ancestor's name, especially one that adds a  
prefix, e.g., "Mac-," or a suffix; e.g., "-son," to the  
earlier name ■ *n.* PATRONYMIC NAME a patronymic  
name [Early 17th c. Via late Latin *patronymicus* from Greek  
*patronymikos*, from *patrōnumos* "father's name."]

**pa-troon** /pa trōon/ *n.* the owner of a manorial estate in New York or New Jersey granted under Dutch rule [Mid-18thC. Via Dutch from French *patron* (see PATRON).]

**pat-sy** /pátsee/ (plural -sies) *n.* somebody who is easily victimized, cheated, or manipulated (*insult*) [Late 19thC. Origin uncertain: perhaps from Italian pazzo "fool."]

**pat·ten** /pátt'n/ *n.* a clog, sandal, or overshoe with a raised wooden sole to raise the wearer's feet above mud [14thC. From French *patin*, from *patte* "paw" (source of English *patrol*).]

**pat·tər¹** /pátter/ vi. (-tered, -ter-ing, -ters) 1. MAKE A QUICK TAPPING SOUND to make a quick light tapping sound on something ◊ *The rain pattered against the window.* 2. STEP LIGHTLY to move or run with short quick light steps ◊ *She pattered across the floor in her pajamas.* ■ **n.** TAPPING NOISE a quick light tapping sound [Early 17thC. Formed from PAT “to hit,” with the literal sense “to keep on hitting,” thought to suggest the action.]

**pater-ter** /pátər/ *n.* 1. GLIB AND RAPID TALK the fast well-prepared talk of someone such as a comedian or salesperson 2. JARGON the language that belongs to a specific group or class of people 3. SMALL TALK meaningless empty chatter ■ *v.* (-tered, -tering, -ters) 1. *vi.* TALK QUICKLY to speak rapidly and glibly 2. *vt.* REPEAT SOMETHING RAPIDLY to repeat something quickly in a mechanical way [14thC. Shortening of PATER-NOSTER.The modern meaning "fast speech" evolved from "to mumble prayers quickly" (the way the paternoster was said in church) via "to speak quickly and glibly."] **SYN:**

**pat-tern** /páttern/ *n.* 1. DESIGN a repeated decorative design, e.g., on fabric  $\circ$  a **zigzag pattern** 2. PROTOTYPE an original design or model from which exact copies can be made 3. PLAN FOR MAKING SOMETHING a plan or model used as a guide for making something  $\circ$  a **knitting pattern** 4. REGULAR FORM a regular or repetitive form, order, or arrangement  $\circ$  a **predictable pattern of behavior** 5. GOOD EXAMPLE a model that is considered to be worthy of imitation 6. REGULAR WAY OF DOING SOMETHING a regular or standard way of moving or behaving  $\circ$  the **flight patterns of birds** 7. METALL MODEL USED FOR MAKING A MOLD a wood, plaster, or metal shape used to make a mold for casting in a foundry. The original model is often slightly oversized to allow for the contraction on cooling. 8. SEW LENGTH OF FABRIC a length of fabric that is enough to make a garment 9. ARMS GUNSHOTS ON TARGET marks made by shots from a gun on a target 10. ARMS SPREAD OF SPENT PROJECTILES the dispersal of projectiles such as artillery shells and shrapnel on the ground around a target ■ *vt.*

(-terned, -tern-ing, -terns) 1. MIMIC to imitate the design of something 2. PUT A PATTERN ON to make something into, or decorate something with, a repeated decorative design [14thC. Via Old French *patron* "pattern," also "patron," from Latin *patronus* "patron." The underlying meaning is of a patron commissioning work and providing a model or example to be copied.]

**pat-tern-ing** /pátrn-íng/ *n.* a design or configuration that is in accordance with a pattern



George S. Patton

**Pat-ton** /pátt'n/, George S. (1885–1945) U.S. general. In World War II he commanded the Third Army in France, successfully defeating the Germans.

**pat-ty** /páttee/ (plural -ties) *n.* 1. FLAT PORTION OF FOOD a small flat individual cake made from ground or chopped meat, vegetables, or other food 2. SMALL PIE a small pie or pastry 3. = patty shell [Mid-17thC. Anglicization of French *pâté*, influenced by PASTY.]

**pat-ty-pan squash** *n.* a variety of wheel-shaped summer squash with a ribbed edge. Latin name: *Cucurbita pepo*. [Pattypan from PATTY + PAN]

**pat-ty shell**, **pat-ty** (plural -ties) *n.* a decorative edible shell of baked puff pastry that is filled with other food such as meat, fish, vegetables, or fruit

**pat-u-lous** /páchelass/ *adj.* not used to describe branches that spread or expand from a central point [Early 17thC. Formed from Latin *patulus*, "standing open," from *patere* "to be open."] —**pat-u-lous-ly** *adv.* —**pat-u-lous-ness** *n.*

**pat-zer** /pátsér, pátsér/ *n.* somebody who plays chess badly (*insult*) [Mid-20thC. Origin uncertain: perhaps from German *patzen* "to bungle."]

**Pau** /pə/ city in southwestern France. It is the capital of the Pyrénées-Atlantiques Department, in Aquitaine Region. Population: 83,928 (1990).

**PAU, P.A.U.** *abbr.* Pan American Union

**pau-ci-ty** /páwssatee/ *n.* 1. DEARTH an inadequacy or lack of something 2. FEWNESS a small number of something [14thC. Via Old French *paucité* from Latin *paucitas*, from *paucus* "few, little."]

**Paul** /páwl/, St. (3?–62?) Early Christian missionary. He became a Christian after having a vision of Jesus Christ on the road from Jerusalem to Damascus. A major missionary of Christianity, he was also its first theologian. His life and teachings are described in the Epistles and the Acts of the Apostles in the Bible. Known as Saul of Tarsus, Paul the Apostle — **Paul-ine** /páw lín, -léen/ *adj.*

**Paul VI**, Pope (1897–1978). He became pope in 1963, and presided over the Second Vatican Council. He traveled widely to extend the Vatican's influence. Real name Giovanni Batista Montini

**Paul-ding** /páwdíng/, James Kirke (1778–1860) U.S. writer. His novels and plays draw on Native American material.

**Pauli ex-clu-sion prin-ci-ple** /pówlee-/ *n.* the law of quantum physics stating that no two identical particles of a particular type (fermions) may occupy the same quantum state at the same time [Early 20thC. Named for Wolfgang Pauli, the Austrian-born U.S. physicist who enunciated it.]

**Paul-ing** /páwling/, Linus (1901–94) U.S. chemist and peace activist. He won a Nobel Prize in chemistry (1954) and the Nobel Peace Prize (1962) for his efforts to end nuclear testing. Full name Linus Carl Pauling

**pau-low-ni-a** /paw lónee a/ (plural -as or -a) *n.* a deciduous Chinese tree of the snapdragon family, especially one that has large heart-shaped leaves and pyramid-shaped clusters of purple or white flowers. Latin name: *Paulownia tomentosa*. [Mid-

19thC. From modern Latin, named for Anna Paulowna (1795–1865), wife of William II of the Netherlands and daughter of Tsar Paul I of Russia.]

**paunch** /pawnc/ *n.* 1. BIG STOMACH a large round stomach on somebody 2. ZOO = rumen [14thC. Via Old French *pance*, *panche*, from Latin *panticem* "belly, bowels."]

**paunch-y** /páwnchee/ (-ler, -lest) *adj.* having a large round stomach —**paunch-i-ness** *n.*

**pau-per** /páwper/ *n.* 1. VERY POOR PERSON somebody who is in extreme poverty 2. RECIPIENT OF PUBLIC AID a needy person who is eligible to receive aid from public funds [15thC. From Latin, literally "getting little," from *paucus* "little" + *parare* "to get."] —**pau-per-ism** *n.*

**pau-per-ize** /páwpe ríz/ (-ized, -iz-ing, -iz-es) *vt.* to make somebody become extremely poor

**pau-lette** /pə pyét/ *n.* a piece of meat or fish that is cut or rolled out very thin, topped with a stuffing, then rolled up into a neat shape and cooked [Early 18thC. Via French, and Italian *polpetta* from Latin *pulpa*, "pulp" (source also of English *pulp*).]

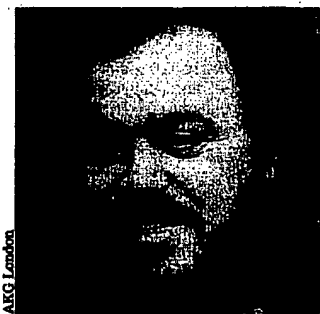
**pau-ro-pod** /páwrə pód/ *n.* a small eyeless invertebrate with eleven segments and nine pairs of legs. Class: Pauropoda. [Late 19thC. From modern Latin *pauropoda*, literally "small-footed," from Greek *pauros* "small" + *podos* "footed," from its tiny feet.]

**pause** /pawz/ *v.* (paused, paus-ing, paus-es) 1. *vi.* STOP BRIEFLY to stop doing something before carrying on *o He paused for a moment and then continued eating.* 2. *vi.* STAY BRIEFLY to stop somewhere for a short time *o I paused to glance into a shop window.* 3. *vi.* HESITATE to hesitate before doing or saying something 4. *vt.* CAUSE SOMETHING TO PAUSE to cause something such as a machine to stop temporarily, e.g., by pressing a pause button *o Can you pause the video for a moment?* *n.* 1. BRIEF STOP a temporary break in an activity 2. SHORT SILENCE a brief moment of silence between words, sounds, or musical notes 3. HESITATION a brief moment of hesitation or uncertainty before something happens or is done 4. MUSIC MUSICAL SYMBOL FOR TIME EXTENSION a musical symbol indicating that a note, chord, or pause is to be held longer than the indicated time value. It is represented by a period with an upside-down "u" above it. 5. POETRY = caesura *n.* 6. pause, pause button a control on an electronic or mechanical device such as a video machine that brings it temporarily to a halt [15thC. Via Middle French, and Latin *pausa* "stopping, cessation," from, ultimately, Greek *pauein* "to stop, cease."] —**paus-al** *adj.* —**paus-ing** *n.* *o* to give somebody pause to make somebody to hesitate or reconsider

#### WORD KEY: SYNONYMS

See Synonyms at *hesitate*.

**pa-vane** /pə vān, pə vān/ *n.* 1. DANCE STATELY DANCE a slow stately court dance performed in the 16th and 17th centuries 2. MUSIC MUSIC FOR A PAVANE a piece of music written for a pavane, usually in slow duple meter [Mid-16thC. Via French from Italian *pavana* "Paduan," from *Pavo*, a dialect name for the city of Padua.]



Luciano Pavarotti

**Pav-a-rot-ti** /páwvə róttee/, Luciano (b. 1935) Italian tenor. Known for his great vocal power and range, he is associated with 19th-century Italian opera.

**pa-ve** /payv/ (paved, pav-ing, paves) *vt.* 1. PROVIDE WITH A SURFACE FOR WALKING ON to cover something with brick, concrete, or other hard materials in order to make it a suitable surface for walking or traveling on 2. BE A SURFACE FOR WALKING ON to serve as the material that is used to cover the surface of something in order to make it suitable for walking or traveling on *o Large stone slabs paved the path.* 3. COVER to cover a surface with a flat, uniform material, e.g., leaves

or flowers [14thC. Via Old French *paver* "to beat, tread down."] —**pav-er** *n.* *o* to prepare for and facilitate the progress of something

**pa-vé** /pa váy, pə váy/ *n.* a jewel setting in which stones are set very close together so that the surface of the piece and obscure the individual stones [19thC. From French, "paved."]

**pave-ment** /páyvmnt/ *n.* 1. TRANSP PAVED SURFACE, especially of a road 2. ROAD PAVEMENTS material such as concrete or stone used to make a pavement 3. CIV ENGRG A PATH the layered structure that forms of a path, road, carriageway, or sidewalk 4. U.K. = sidewalk 5. GEOL LEVEL AREA OF bare rock that resembles a pavement [Old French from Latin *pavimentum* "paving," from *pavire* "to beat, tread down."]

**pav-id** /pávid/ *adj.* timid and fearful [17thC. From Latin *pavidus*, from *pavere* "to fear."]

**pa-vil-ion** /pə villyən/ *n.* 1. BUILDING OUTSTANDING summer house or other often ornate building in a park, fair, or garden used for entertainment 2. EXHIBITION TENT a large temporary structure used for displaying things 3. BIG TENT a large and ornate tent 4. BUILDING ANNEX a detached building that forms part of a complex for a hospital or public building 5. MINERALS FACET of a brilliant-cut gem that comes below the crown [16thC. From Latin *pavilion*, from *pavillio* "to enclose or completely surround" (literary) *o "Pavilioned in splendour, And praise" (Sir Robert Grant, O Worshipful Knight of the Bath)* 3. CONSTRUCT A PAVILION FOR to construct something [Pre-12thC. Via Old French *pavillon* from Latin *papilio* "butterfly, tent," was thought to resemble a butterfly's wings.]

**pav-ing** /páyvín/ *n.* 1. CONSTRUCTION OF PAVED SURFACE act of making a paved surface 2. PAVED SURFACE of paved stone, brick, concrete, or other material 3. MATERIAL FOR MAKING A HARD SURFACE material of concrete or stones used for making a road, e.g., for a path or road

**pav-lor** /páyvyər/ *n.* a person who lays out a path or road [From Old French *paveur*, from *paver* "to pave."]

**pav-lour** *n.* U.K. = pavior

**pa-vis** /páwviss/ *n.* a large heavy medieval shield to protect the whole body [14thC. Via French from medieval Latin *pavense* "from Padua," from northern Italy where these shields were originally made.] —**pawn-ag** *adj.*

**Pav-lov** /páv lov, -láv/, Ivan Petrovich (1849–1936) Russian physiologist. He became famous for his studies on conditioned reflexes with dogs and won a Nobel prize in 1904.



Anna Pavlova

**Pav-lo-va** /páv lóva, pávla-va/, Anna (1881–1932) Russian ballet dancer. Admired for her poetic style and movement, she performed many classical ballets, including "The Dying Swan" and "The Firebird." [From Russian *Павлова*, from *Павел* "Peter" + *Лавра* "Laura."]

**Pav-lo-vi-an** /páv lóvee ən, páv lóv-ee-ən/ *adj.* 1. RELATING TO PAVLOV relating to the Russian physiologist and his work [Mid-20thC. Named for I.P. PAVLOV.]

**Pav-lo-vi-an con-di-tion-ing** *n.* a method of conditioning

**Pa-vo** /páyvə/ *n.* a constellation of the sky

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